



Position Description

Position Title: Postdoctoral Research Fellow

Position Number: xxxxxx

Classification: Level A

Organisational Unit: School of Science, Computing and Emerging Technologies

Department: Chemistry and Biotechnology

Position Purpose

The position supports research undertaken within the GETCO2 Centre of Excellence and contributes to research activities across the Centre's partner universities and ANSTO, with a particular focus on the Computation and Characterisation Theme. The position will support the Centre's objective of developing innovative catalyst technologies for carbon dioxide conversion through advanced characterisation, electrochemistry and computational approaches. The appointee will contribute to collaborative research programs and strengthen the Centre's research capability through active engagement with researchers across multiple institutions.

The appointee will focus on the development and application of in situ and operando techniques for studying catalytic processes, including the design and optimisation of electrochemical cells for catalyst characterisation and electrolyser research. The role will involve undertaking experimental and analytical research, contributing to the interpretation of complex data sets, and supporting the dissemination of research outcomes through publications, presentations and Centre reporting activities.

The position requires the ability to work both independently and collaboratively within a multidisciplinary research environment, while building strong networks across the Centre's various nodes, particularly

within Victoria. The successful candidate will actively contribute to the Victorian node community and support the development of students and early-career researchers across the GETCO2 network.

Location

This position is currently located at the Hawthorn campus, but the incumbent may be required to undertake duties at any of the University's campuses. Thus, the incumbent must be willing to travel between campuses and work at a range of locations. Subject to suitability, this position may be eligible for flexible working options such as working from home arrangements.

Reporting Line

Reports to: P34920 Rosalie Hocking

Direct reports: None

Key Responsibility Areas

Research, Experimental Development & Technical Capability	• Design, build and optimise in situ/operando electrochemical cells for spectroscopy studies, including synchrotron and laboratory-based XAS of catalysts under realistic reaction conditions. • Conduct spectroscopy measurements (laboratory-based and/or synchrotron) to characterise catalyst structure, oxidation state and local coordination environment during long-term operation. • Investigate catalyst degradation, restructuring or deactivation mechanisms under prolonged electrochemical and catalytic cycling. • Contribute to the development and refinement of laboratory-based XAS capability at Swinburne University of Technology, including the iterative development of in situ cell designs. • Troubleshoot experimental setups and instrumentation.
Data Analysis, Interpretation & Research Outputs	• Process and analyse spectroscopy and imaging data to extract structural and electronic information. • Where relevant, integrate spectroscopic findings with computational modelling (e.g. DFT) to support mechanistic interpretation. • Correlate characterisation data with electrochemical performance metrics provided by collaborating nodes. • Prepare manuscripts for peer-reviewed publication and present findings at conferences and Centre events. • Contribute to Centre reporting requirements, including milestone reports and ARC reporting.

Cross-Node Collaboration & Stakeholder Engagement	• Liaise with Chief Investigators and researchers across GETCO2 partner universities and ANSTO to align characterisation activities with the Centre's broader catalyst development goals. • Provide characterisation support and expertise to other Centre themes as required. • Represent the Victorian node in Centre-wide meetings, workshops and technical discussions.
Community & Capability Building	• Actively engage with the Victorian node community and the broader GETCO2 network, including students and early-career researchers. • Contribute to the co-supervision of students. • Support capability building, knowledge sharing and collaboration across the Centre.
Swinburne Values	Commitment to the Swinburne Values of: • One Swinburne - We work together, bringing our unique skills to achieve our common purpose and strategy. • Future – Focused - We commit to taking bold strides – ‘moon shots’ – and are constantly innovating, disrupting, renewing and changing to create tomorrow's technology and talent today. • Engaged - We strive to be the most industry-engaged university, to amplify our impact and support all students to be future-ready • Empowered - We are trusted, and expected, to act and make decisions commensurate with our roles and skills, and to drive continuous improvement, to deliver our common goals. • Accountable - We are accountable for our contributions to Swinburne's success and sustainability, for the ways we work together, and for the outcomes that we deliver for students, partners and society.
Other	• Undertake Division-wide and/or university-wide responsibilities as required.

Key Selection Criteria

Candidates are required to respond to each of the selection criteria.

		Essential / preferable
Qualifications	• A PhD (or near completion) in Chemistry, Materials Science, Physics, or a related discipline, with a research focus in electrochemistry, computational chemistry, or spectroscopy.	Essential
Experience/ Knowledge/Attributes	• Demonstrated experimental research skills relevant to catalysis, electrochemistry, and/or materials characterisation.	Essential

	• Strong analytical and problem-solving skills, with the ability to design and troubleshoot experimental setups, particularly for in situ/operando cell development.	Essential
	• Evidence of research outputs commensurate with career stage, including peer-reviewed publications and conference presentations.	Essential
	• Excellent written and verbal communication skills, with the ability to prepare technical reports, research publications and manuscripts.	Essential
	• Demonstrated ability to work collaboratively within a multidisciplinary and multi-institutional research environment.	Essential
	• Demonstrated knowledge of chemistry, chemical handling, spectroscopy and analytical chemistry.	Essential
	• Advanced expertise in at least one relevant area of electrochemistry, computational chemistry, spectroscopy or related discipline.	Essential
	• Experience designing and working with in situ/operando electrochemical cells.	Preferrable
	• Experience working within large collaborative research centres and/or cross-institutional research teams.	Preferrable
	• Ability to understand, modify and execute Python code for scientific data analysis.	Preferrable
Other	• A valid working with children's check card (or ability to obtain prior to or upon commencement)	Essential